97N-0511

AMERICAN FRESH JUICE COUNCIL

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Ms. Janice Oliver
Deputy Director
Center for Food Safety & Applied Nutrition
HFS3 FDA
200 C Street SW.
Washington, DC 20204

Dr. Terry Troxell
Director
Office of Plant and Dairy Foods and Beverages
Center for Food Safety and Applied Nutrition
HFS3 FDA
200 C Street S.W.
Washington, DC 20204

Dear Ms. Oliver and Dr. Troxell:

I am providing you this copy of a California Citrus Quality Council document in a continuing effort to educate FDA on common industry practices in relation to citrus fruit. This document may prove useful to you, as it relates closely to information recently provided by the American Fresh Juice Council.

Although I cannot comment on whether the CCQC would support the inclusion of this document into the docket, I can suggest that you contact Mr. Chuck Orman (Sunkist Growers, Research & Technical Services – 909-933-2257) if this interests you.

Best regards,

J. PETER CHAIRES
Chairman

JPC/dg

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CALIFORNIA CITRUS QUALITY COUNCIL

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CALIFORNIA CITRUS INDUSTRY MICROBIAL CONTAMINATION PREVENTION PRACTICES

The California citrus industry has provided a wholesome, nutritious and safe product for consumers across America and around the world for the past 100 years. This paper briefly describes practices that have permitted such success. The microbial prevention practices outlined below relate to normal commercial operations and the handling of fresh citrus which constitutes the overwhelming tonnage produced in California.

NOT ALL FRUIT IS ALIKE

Cirrus has the advantage of having a rind surrounding the portion of the fruit normally eaten fresh. The rind protects this portion of the fruit from plant pathogens and it also isolates it from microbes that are of concern from the standpoint of human health. Additionally, the naturally occurring high acid environment within the fruit itself limits the viability of certain micro organisms This has not lessened efforts to aggressively keep growing, harvesting and handling practices clean and sanitary. For example, the rind of commercially packed citrus is routinely sanitized to eliminate microbial contamination.

GROVE PRACTICES

Water Sources - California citrus is fortunate in that the product originates on trees which minimizes contact with irrigation water in the field. For almost two decades, the industry has been a pioneer in low volume irrigation methods which has reduced the amount of water flow in a grove and concentrates water penetration into the root zone.

Irrigation water used in production of California citrus is usually from one of two sources. One is from water pumped from wells at depths ranging from 50 lo over 400 feet. The second source of irrigation water *for* citrus is "surface water" from streams and rivers which is conveyed to farmers. Both federal and state regulations require specific standards for conveyance and monitoring for this resource. Regulations are also in place which restrict USC of reclaimed water in production of food crops.

Field Worker Hygiene - Federal and State laws require employers to provide toilet and hand washing facilities for field worker use. The employer has the responsibility of ensuring that employees understand the importance of and practice good personal hygiene. Logs must be maintained which include average number of employees, number of sanitation units and cleaning frequency.

Harvest Practices - All employees are required to wear gloves during the process of harvest. Gloves hive been a staple of the field worker for years and are provided by the employer. The gloves provide another layer of dcfcnsc against microbial contamination.

Training sessions arc held in which workers are instructed not to pick up dropped fruit. There are a number of reasons for this training component. Fruit that has fallen from the tree may be weak and usually will nor stand the rigors of handling and transporting to the ultimate destination. This fruit will spoil much more rapidly than companion fruit in the same carton creating decay and resulting in marketing problems as well as consumer dissatisfaction. Furthermore, this fruit may well have begun to spoil and really has no market value. It will only create costs for the grower and handler.

HANDLING PRACTICES

In the citrus industry the term "handling" refers to the process of moving citrus from the field through all the steps necessary to place it in a carton for eventual transporting to a retail outlet. Once removed from the tree, fruit is deposited in field bins that arc routinely cleaned after each use. Bin contamination, in this case, ranges from snails adhering to bin walls, to pests, spores xnd microbials that can cause dccny OK spoilage. The operations managers at packing houses have an economic incentive to maintain and use only clean bins. Fruit bins arc designated for fruit handling purposes only.

From the field to the packing facility the movement of the fruit is handled in large bulk bins mechanically loaded for transport. The fruit is initially rinsed in water containing chlorine or another anti-microbial material to loosen dirt and to sanitize the surface of the fruit. Culls and rots are removed and then the remaining fruit is washed with approved cleaning solutions to further disinfect the surface of the fruit during automated movement over brush rollers to ensure thorough coverage with the disinfectant. As required by law, a potable water rinse follows, providing clean fruit for cxtcnsivc examination/sorting IO eliminate blemished fruit before packing. All these approved cleaning and sanitizing procedures used in the process of fruit handling provide additional assurances in the prevention of microbial contamination. Fruit handling equipment, belts, fruit contact surfaces, storage rooms and buildings are routinely treated with sanitizers LO prevent cross-contamination or spread of micro organisms.

Again, the incentive for the manager to inspect equipment, including conveyor rollers and belts, is built in inasmuch as breakdowns lead to a loss of productivity and added marketing costs. Furthermore, it is the cracks, crevices, et al., in fruit that can provide a haven for the presence of microbials. Thus, once again, efficient management at such facilities for quality and other

reasons unrelated to microbial contamination problems have enabled our citrus industry to enhance the attractiveness of its products by also offering a consumer-safe food item.

Worker Hygiene . As the fruit leaves the washing areas it is transported on conveyor belt lines for sorting and grading. The majority of the process is done mechanically with oversight provided by specially trained employees. All cirrus packing facilities have hand washing areas in conjunction with toilet facilities. Additionally, periodic training sessions are scheduled in which management instructs employees on the importance of good hygiene and the need to wear gloves. Gloves arc provided by the employer and changed regularly. Another incentive for the use of gloves is to prevent inadvertent finger nail punctures on the surface of the fruit during inspection/examination which not only blemishes the fruit but also creates a site far decay organisms and microbial growth.

Hand Sorting Functions - Once the initial mechanical grading and sorting processes are completed, fruit is conveyed to a grading area and visually inspected by employees. Gloves arc worn at all times as fruit is haadlcd to complete the inspection process. Fruit with cracks, crevices or other blemishes that could harbor contaminants is discard4 at this time.

Packing - The majority of fruit is packed by machine but a portion is still packed by hand and again use of cloth gloves is mandated.

General Maiutenance - Approximately 100 California packing houses ccc cngegcd in the process of handling citrus fruit. Each maintains a strict cleaning and maintenance schedule and has bin cleaning programs. Storage areas arc regularly treated with sanitizers. Equipment is washed and floors cleaned. Routine monitoring of the packing house environment, including fruit handling equipment and fruit storage areas, is performed to ensure that adequate cleaning is caking place. This protects the fruit from exposure to decay causing microbials/organisms. Spore counts are regularly made on a scheduled basis IO guard against build up of decay organisms.

Trace Back - In the event of discovery of a contamination problem after fruit Icavcs the packing house, fruit identification is maintained from the time of harvest to point of sale. When co-mingling or pooling of the product is required, individual identity may bc lost. However, the various sources of fruit in the pool can be traced.

Summary - The California citrus industry has never had a known case of microbial contamination resulting front fresh fruit handling. This is strong testimony supporting the industry's stringent practices. Today, because of increased concems, the industry continually reviews and strengthens its safeguards to insure the continuance of that track record.